

CLAIMS

1. Storage and ink refilling station (1) for a cartridge (2) of a printhead, comprising a container (4) suitable for containing a predetermined quantity of ink (17), arranged in a collection chamber (18), adjacent to a bottom wall (6) serving as a support platform (6a) of said container (4) on a horizontal plane (9), for defining a vertical operating position (P1) of said station (1), said container (4) also being provided with a housing (10), attached to a top wall (7) of said container (4) and suitable for accommodating said cartridge (2), said station (1) also comprising refilling means (24, 26) at least partially immersed in said predetermined quantity of ink (17), when said station (1) is in said vertical operating position (P1), and suitable for cooperating with said cartridge for transferring said ink from said collection chamber (18) to said cartridge (2), **characterized in that** a back-flow compartment (45) is provided, surrounding said housing (10) and communicating freely with said collection chamber (18), and suitable for receiving said ink (17), when said station (1) is disposed in any position (P2) other than said vertical operating position (P1).
2. Station according to claim 1, **characterized in that** said back-flow compartment (45) has a volume at least equal to the volume of said predetermined quantity of ink (17).
- 20 3. Station according to claim 1 or 2, **characterized in that** said back-flow compartment (45), said collection chamber (18) and said predetermined quantity of

ink (17) have proportionate respective volumes such that said refilling means (24, 26) emerge from said ink (17) when said container (1, 4) is in said any position (P2) other than said vertical operating position (P1), so that any leakage of ink through said refilling means is avoided.

- 5 4. Station according to claim 1 or 2 or 3, **characterized in that** said refilling means (24, 26) are disposed in a central position with respect to said bottom wall (6) and symmetrical with respect to the lateral walls (8a, 8b, 8c, 8d) of said container (4).
- 10 5. Station according to any one of the previous claims, **characterized in that** said refilling means comprise an elongated capillary element (26), passing through a bottom wall (11) of said housing (10) and having a lower end (28) facing said bottom wall (6) and an upper end (27) suitable for being inserted in said cartridge (2) for transferring said ink (17) through capillarity from said container (4) to said cartridge (2)
- 15 6. Station according to claim 5, **characterized in that** said capillary element (26) is inserted in an impermeable, tube-like element (24), attached to said housing (10), and extending in said collection chamber (18), perpendicularly to said bottom wall (6), said tube-like element (24) also being disposed in a position that is central with respect to said bottom wall (6) and symmetrical with respect to the side walls (8a, 8b, 8c, 8d) of said container (4), so that said capillary element (26) is not

covered by said ink (17) when said container (4) is tilted laterally, or turned upside down.

7. Station according to claim 6, **characterized in that** said tube-like element (24) consists of a rigid pipe, attached to said bottom wall (11) of said housing (10).

5 8. Station according to claim 6, **characterized in that** said tube-like element (24) consists of a rigid and impermeable sheath, attached tight to said bottom wall (11).

9. Station as in any of the claims from 5 to 8, **characterized in that** said lower end (28) of said capillary element (26) is placed at a distance of not more than
10 about 5 cm from said bottom wall (6).

10. Station according to any one of the previous claims, **characterized in that** said container (4) comprises a compensating device (34) for balancing differences in hydrostatic pressure between said collection chamber (18) and said cartridge (2), said compensating device comprising a lamina valve (36), attached against a
15 boss (32) of the bottom wall (11) of said housing (10), said lamina (36) comprising a flexible portion (38), suitable for elastically assuming one or the other of two positions, at opposite ends with respect to a rest position, when said lamina (36) is urged by the difference in hydrostatic pressure between the cartridge (2) and the collection chamber (18), or vice versa.

20 11. Station (1) for storing and refilling with ink a cartridge (2) of a printhead, comprising a container (4) suitable for holding a predetermined quantity of ink (17)

arranged in a collection chamber (18) adjacent to a bottom wall (6) of said container (4), said bottom wall (6) serving as a support platform (6a) for said container (4) on a horizontal plane (9) for defining a vertical operating position (P1) of said station (1), said container (4) also being provided with a housing (10),
5 attached to a top wall (7) of said container (4) and suitable for accommodating said cartridge (2), said station (1) also comprising refilling means (24, 26) at least partially immersed in said predetermined quantity of ink (17), when said station (1) is in said vertical operating position (P1), and suitable for cooperating with said cartridge (2) for transferring said ink from said collection chamber (18) to said
10 cartridge (2), **characterized in that** a back-flow compartment (45) is provided, surrounding said housing (10) and communicating freely with said collection chamber (18), said back-flow compartment (45), said collection chamber (18) and said predetermined quantity of ink (17) having their respective volumes proportionate in such a way that, when said container (1, 4) is placed on said
15 horizontal plane (9) in any position (P2) other than said vertical operating position (P1), said ink (17) flows back from said collection chamber (18) to said back-flow compartment (45), in such a way that said refilling means (24, 26) emerge from said ink (17), so that any leakage of ink through said refilling means is avoided.